

CLAIMS

1. A network relay apparatus comprising:  
a routing information gathering unit for  
determining the maximum transmission unit of a  
5 transmission path along a route over which packets are to  
be transmitted; and  
a combining unit for assembling a combined  
packet by combining packets up to a length that does not  
exceed the maximum transmission unit of said transmission  
10 path.
2. An apparatus according to claim 1, wherein said  
combined packet carries as a destination address the  
address of an endpoint of the route over which said  
packets are transmitted in combined form, said apparatus  
15 further comprising:  
a disassembling unit for disassembling a  
received combined packet into individual packets if the  
destination address of said received combined packet  
matches the address of said apparatus.
- 20 3. An apparatus according to claim 1, further  
comprising a routing processing unit for selecting a path  
having the largest maximum transmission unit as a path  
for said combined packet from among a plurality of  
transmission paths to the same destination.
- 25 4. An apparatus according to claim 3, wherein said  
routing processing unit selects a path having the largest  
maximum transmission unit as a path for said combined  
packet from among a plurality of transmission paths to  
the same destination by excluding the path along the  
30 shortest route.
5. An apparatus according to claim 1, further  
comprising a combine allow/disallow determining unit for  
determining, based on a packet attribute, whether or not  
said combining unit should be made to combine packets.
- 35 6. An apparatus according to claim 1, further  
comprising a reassembling unit for disassembling a  
received combined packet into individual packets and

reassembling the same into a combined packet of a length not exceeding the maximum transmission unit of the currently selected path if the length of said received combined packet exceeds said maximum transmission unit.

5           7.    A method of combining packets, comprising the steps of:

                  determining the maximum transmission unit of a transmission path along a route over which packets are to be transmitted; and

10                assembling a combined packet by combining packets up to a length that does not exceed the maximum transmission unit of said transmission path.

                  8.    A method according to claim 7, wherein said combined packet carries as a destination address the address of an endpoint of the route over which said packets are transmitted in combined form, said method further comprising the step of:

15                        disassembling a received combined packet into individual packets if the destination address of said received combined packet matches the address of an apparatus that received said combined packet.

20                9.    A method according to claim 7, further comprising the step of selecting a path having the largest maximum transmission unit as a path for said combined packet from among a plurality of transmission paths to the same destination.

25                10.   A method according to claim 9, wherein in said selecting step, a path having the largest maximum transmission unit is selected as a path for said combined packet from among a plurality of transmission paths to the same destination by excluding the path along the shortest route.

30                11.   A method according to claim 7, further comprising the step of determining, based on a packet attribute, whether to combine or not combine packets.

35                12.   A method according to claim 7, further comprising the step of disassembling a received combined

packet into individual packets and reassembling the same into a combined packet of a length not exceeding the maximum transmission unit of the currently selected path if the length of said received combined packet exceeds said maximum transmission unit.

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